The Effectiveness of Parents as Distraction Coaches during Venipuncture: A Randomised Controlled Trial (Pilot study)

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Background

- **Venipunctures - one of most common (outpatient) and feared procedures children undergo**
- **Addressing fears will reduce childhood negative healthcare experiences preventing future healthcare outcomes**
- **Parental behaviour distress-promoting (e.g. apologies) and coping-promoting behaviours (e.g. distraction) can influence child distress and anxiety (Taylor et al., 2011).**

BACKGROUND

- **Mahoney et al. (2010) highlight the need for cost-effective interventions targeting parents' behaviour that can be easily integrated into clinical practice.**

One solution?...

- **Teach cognitive behavioural strategies (e.g. distraction) to parents and encourage use in paediatric settings**

Evidence for distraction?

- Some evidence distraction reduces children's pain and distress during needle-related procedures (Birnie et al., 2013)

- Increased distraction by parents not always reflected in reduced distress and pain (Kleiber et al., 2001)
- Cochrane review found no evidence for parental coaching plus distraction (Uman et al. 2013).
- However, only 3 trials met inclusion criteria of this review, so questions remain.

STUDY AIMS

To strengthen and extend research assessing the effectiveness of a parent-targeted intervention for children undergoing venipuncture by:

1. **Distributing intervention materials to parents in advance of the procedure**
2. **Assessing parents' engagement in distraction.**
3. **Children aged 3-6 years, extending previous research by focusing on early childhood.**
4. **Investigating further the use of interactive video games as distractors (Dahlquist et al., 2002) (by using an electronic tablet)**

Study Hypotheses

It was expected that in the distraction training group would:

1) **Parents would use more distraction techniques than controls**

2) **Children would exhibit more coping behaviours than the controls**

3) **Children would report less pain than controls.**

METHOD

DESIGN

- **Randomised controlled trial (Pilot):**

  2 groups; experimental/control, controlling for baseline scores.

- **Dependent variables:**
  - **Child pain**
  - **Child coping**
  - **Child distress**

METHOD

Participants and sample size

- **44 parents & children aged 36 - 72 months (*M*=58.07 months, *SD*=12.99),**
- **Outpatients for venipuncture.**
- **Exclusion criteria: cancer treatment & language barriers.**

Sample size/power calculations:

- **A sample size of 22 per group yields power of .9 (Kleiber et al., 2001) for medium effect sizes for pain & behavioural distress.**

PROCEDURE

- **Staff identified eligible participants**
- **Randomly assigned to conditions**
- **Staff (blinded) sent colour-coded materials to parents at least 3 days in advance of their child's appointment.**

Referrals

Reasons for venipuncture:

Immunology (13.6%)

Respiratory (2.3%),

Endocrinology (15.9%)

Neurology (6.8%)

Rheumatology (2.3%).

Haematology (15.9%),

GI (11.4%),

Genetic (9.1%),

Renal (2.3%)

INTERVENTION

INTERVENTION:

- **Booklet contained information on distraction, including tips on: positioning, language, staying calm.**
- **Children shown the electronic tablet upon arrival, chose a game, and both given an opportunity to practise with it (3-5 minutes to avoid loss of interest)**
- **Child told tablet would be available to them while they were with the doctor.**

Intervention Booklet – sample

AVOID SAYING	TRY SAYING
You'll be ok (reassurance)	Look at this! Who is that? What are they doing? (distraction)
There's nothing to worry about (reassurance)	Wow! What does this do? Look, you scored a point! (distraction)
You're being a baby (criticism)	What happens if I press this button? (distraction)
I'm sorry (Apologising)	You're being so brave! (Praise, encouragement)
Don't Cry (negative focus)	You did so well holding your arm still (Praise)
It's over (negative focus)	You did such a great job, I'm so proud of you! (Praise)

Intervention Booklet – sample

Keeping Focused:

- Encourage your child to play with the game and press the buttons.

- If your child does not want to play the game themselves, then you can play the game, making sure your child can see the screen and what is happening.
-

CONTROL GROUP:

- **Children received standard care and parents received no tips or strategies on distracting their child**

- **No electronic tablet**

Measures

- **100-mm VAS rating scale (not at all-extremely well)**

- **BEFORE**
  - **parental pre-procedural worry,**
  - **child pre-procedural worry**
  - **parental prediction of child upset**
  - **parental confidence in ability to help**
- **AFTER**
  - **parental post-procedural upset,**
  - **parent rating of child upset**
  - **pain during the procedure**
  - **parent rating of ability to help**

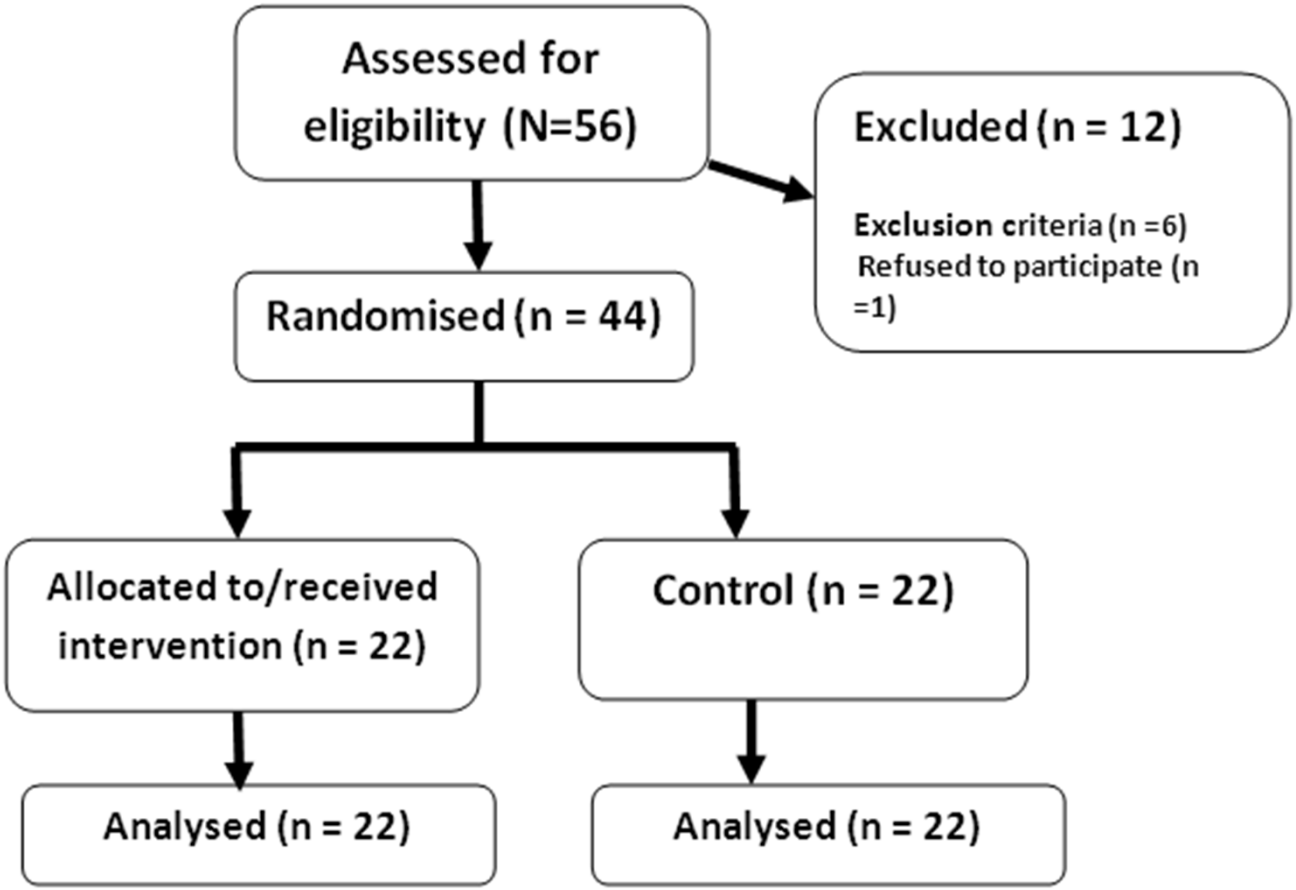
- **Child and Adult Medical Procedure Interaction Scale-Short Form (CAMPIS-SF) (Blount et al., 2001) observational scale: Subscales include: Child coping, Child Distress, Parent Distress-Promoting**

- **Distraction Coaching Index (DCI) (Kleiber et al., 2007) behavioural observation (assessed at 3 time points) (e.g. using distraction, effort, encouragement)**

- **Faces Pain Scale-Revised (FPS-R) (Hicks et al., 2001) (0-10).**

(NOTE: A video camera recorded the procedure)

Flow of participants through the study



Randomisation check

There were no differences at baseline between groups on any of the variables measured.

Means (SDs) of post-procedural measures in experimental and control groups.

Variable	Exp	Control	Effect Size/sig
Parental rate-Child Pain	31.18 (15.67)	44.95 (25.37)	P=.03
Child pain rating	3.27 (3.57)	3.36 (5.46)	N.S.
Child coping	11.91 (3.04)	8.23 (3.68)	LARGE
Child distress	6.32 (3.20)	7.68 (3.72)	N.S.
Parent coping promoting	11.83 (2.82)	8.50 (2.99)	LARGE
Parent distress promoting	4.22(1.93)	5.18 (2.97)	N.S.
Distraction Coaching	37.99 (12.58)	20.31 (11.22)	LARGE

, Bonferroni corrections , p value < .006 = Sig

Summary of inter-correlations between predictor variables and outcome variable (child distress)

Variable	1	2	3	4
1. Child pain rating (FPS-R)				
2. Parent prediction of child upset	.13			
3. Parental use of distraction coaching	-.17	-.13		
4. Parent distress promoting behaviours	.17	.19	-.49***	
5. Child distress behaviours	.43**	.36*	-.49***	.55***

Note. Statistical significance *$p < .05$; **$p < .01$; *** $p < .001$

Hierarchical regression model of child distress behaviour

Step	Variable	β	*t*	R	R^2change
1	Parent prediction upset	.25*	2.04	.36	.13*
2	Parent use of distraction coaching	-.45***	-3.49	.57	.20***
3	Parent distress promoting behaviour	.37**	2.67	.65	.10**

*$p < .05$; **$p < .01$; *** $p < .001$

Overall model: $R^2 = .43$, Adjusted $R^2 = .39$; (F (3, 40) = 9.97, p < p<.001)

Discussion

- **Parents who received the distraction training intervention engaged in significantly more distraction and more coping-promoting behaviours.**
- **Children in the distraction group exhibited significantly more coping behaviours (e.g. non-procedural talk and playing with tablet)**
- **No sig differences in child-reported pain**
- **However, parent-assessed pain approaching (corrected) significance (p = .03).**
- **Greater use of distraction resulted in lower child distress.**

Conclusion

- **Active distraction during procedure reduces child distress during venipuncture**
- **Promoting this behaviour should yield positive outcomes.**
- **Simple distraction-coaching training (booklet and tablet) was effective in increasing this behaviour.**

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

NUI Galway
OÉ Gaillimh

University of
HUDDERSFIELD

THANK YOU!

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